

AMENDMENTS TO THE DRAWINGS

The attached sheet of drawings includes changes to the drawings to reflect appropriate reference numerals as indicated in the specification.

Attachment: Replacement sheet

REMARKS

Claims 1, 2 and 6-13 are pending in the present application. Claim 1 has been amended to incorporate the subject matter previously recited in claims 3, 4 and 5. Accordingly, claims 3-5 have been cancelled. New claim 13 has been added, support for which may be found, at least, in Example 1 of the specification as filed. No new matter has been added by way of the above amendments.

Rejections under 35 USC § 112, Second Paragraph

Claim 9 stands rejected under 35 U.S.C. §112, second paragraph as being indefinite. Specifically, claim 9 is rejected because there is no antecedent basis for the phrase "the purge gas."

In response to the outstanding rejection, Claim 9 has been amended to depend from claim 8 as suggested by the Examiner. Applicants respectfully request withdrawal of the outstanding rejection.

Rejections under 35 USC § 102

Claims 1-4, 7-10 and 12 stand rejected under 35 U.S.C. §102(b) as being anticipated by EP 0 586 244 (hereinafter "EP '244").

EP '244 discloses a method of reusing an exhaust gas in a polyolefin production plant, comprising producing an exhaust gas containing residual monomers, nitrogen, and hydrocarbon solvent from a polymerization reactor (A), directing the exhaust gas to a flash chamber (B) and a stripping zone (C), directing exhaust gas to a pressure swing adsorption unit (D), selectively adsorbing hydrocarbons in the adsorber to produce purified nitrogen, regenerating the adsorber under reduced pressure with purified nitrogen product purge gas, reusing nitrogen product for pressurizing the regenerated adsorber and as stripping gas in the stripping zone, and recirculating separated hydrocarbons to the polymerization reactor. The adsorber can contain two columns in a pressure swing arrangement, each containing a single layer or multiple layers of adsorbent such

as silica gel or zeolite. EP '244 also discloses that typical adsorbents useful in the pressure swing adsorption unit (D) are zeolite molecular sieves, activated carbon, silica gel, activated alumina, etc., with or without metals at column 6, lines 37-40.

However, EP '244 fails to disclose an adsorbent layer formed from a specific combination of specific adsorbent materials and comprising laminated adsorbent layers in the specific order as recited in present claim 1.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Since EP '244 fails to teach the presently claimed invention, EP '244 cannot constitute a proper anticipatory reference, within the meaning of 35 U.S.C. §102(b). Reconsideration and withdrawal of the outstanding rejection are respectfully requested.

Claim Rejections under 35 USC § 103

Claims 5 and 6 stand rejected under 35 U.S.C. § 103 as being unpatentable over EP '244 in view of US Patent Publication 2003/0070546 to Zwilling et al. (hereinafter "Zwilling").

EP '244 is discussed above, within the context of the rebuttal of the 35 U.S.C. §102(b) rejection.

Zwilling discloses a process for recovering nitrogen and monomers from a polymerization reactor exhaust, comprising contacting with an adsorbent unit that preferentially removes light hydrocarbons from nitrogen, and reusing purified nitrogen as purge gas in the

polymerization reactor, wherein the adsorbent unit contains multiple beds and a pretreatment layer to adsorb water.

Zwilling also discloses silica gel, activated alumina, or silica gel and activated alumina in claim 9, and activated alumina, silica gel, activated carbon, zeolite and combinations thereof at [0053] as an adsorbent material.

However, neither EP '244, Zwilling, nor the combination thereof, teach or suggest an adsorbent layer formed from a specific combination of specific adsorbent materials and comprising laminated adsorbent layers in a specific order as recited in present claim 1.

Moreover, the present invention achieves unexpected results as exemplified in the working examples of the specification (i.e., impurities in the exhaust gas are more efficiently removed).

Accordingly, Applicants respectfully request reconsideration and withdrawal of the outstanding rejection.

Claim 11 stands rejected under 35 U.S.C. § 103 as being unpatentable over EP '244 in view of US Patent 6,322,612 to Sircar et al. (hereinafter "Sircar").

EP '244 was discussed above, within the context of the rebuttal of the 35 U.S.C. §102(b) rejection.

Sircar discloses a pressure swing adsorption process wherein a regenerated adsorbent column is repressurized using product gas from another adsorption column or a storage vessel at feed pressure.

However, Sircar does not teach or suggest an adsorbent layer formed from a specific combination of specific adsorbent materials and comprising laminated adsorbent layers in a specific order as recited in present claim 1.

Therefore, the combination of EP '244 in view of Sircar cannot arrive at the presently claimed invention. Applicants respectfully request reconsideration and withdrawal of the outstanding rejection.

In view of the foregoing, Applicants respectfully submit that each of the outstanding rejections has been overcome. A Notice of Allowance is earnestly solicited.

Conclusion

Should there be any outstanding matters that need to be resolved in the present application; the Examiner is respectfully requested to contact Monique T. Cole, Reg. No. 60,154 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

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Respectfully submitted,

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Attachment: Replacement Sheet of Drawing